

Claims

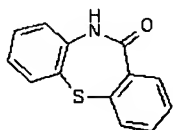
1. A method of preparing 10H-dibenzo[b,f][1,4]thiazepin-11-one represented by Formula 1, comprising the steps of:

(a) reacting dithiosalicylic acid represented by Formula 2 with 1-chloro-2-nitrobenzene in a basic aqueous solution in the presence or absence of a reducing agent, to prepare 2-(2-nitrophenylsulfuryl)benzoic acid represented by Formula 3;

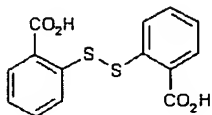
(b) subjecting the 2-(2-nitrophenylsulfuryl)benzoic acid represented by Formula 3 to nitro group reduction in the presence of hydrogen, a solvent and a heterogeneous metal catalyst, to prepare 2-(2-aminophenylsulfuryl)benzoic acid represented by Formula 4; and

(c) directly cyclizing the 2-(2-aminophenylsulfuryl)benzoic acid represented by Formula 4 in an organic solvent in the presence or absence of an acid catalyst:

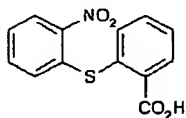
Formula 1



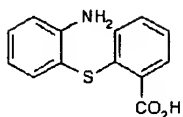
15 Formula 2



Formula 3



Formula 4



2. The method as defined in claim 1, wherein the step (a) is performed at 50-100°C, in which 1-chloro-2-nitrobenzene is used in an amount of 2-3 equivalents,
5 based on 1 equivalent of dithiosalicylic acid.

3. The method as defined in claim 1, wherein a base for use in the basic aqueous solution is selected from the group consisting of sodium hydroxide, potassium hydroxide, lithium hydroxide, sodium carbonate, potassium carbonate, and sodium bicarbonate, and is used in an amount of 4-5 equivalents.

10 4. The method as defined in claim 1, wherein the reducing agent is selected from the group consisting of sodium borohydride, sodium hyposulfite, zinc, magnesium, and hydrazine.

5. The method as defined in claim 1, wherein the step (b) is performed at 1-200°C under pressure of 10-1,000 psig for 1-14 hours.

15 6. The method as defined in claim 1, wherein the solvent used in the step (b) is selected from the group consisting of water, methyl alcohol, ethyl alcohol, n-propyl alcohol, and iso-propyl alcohol.

7. The method as defined in claim 1, wherein the 2-(2-nitrophenylsulfuryl)benzoic acid in the step (b) is used in an amount of 1-50 wt%, based on total reactants.

8. The method as defined in claim 1, wherein the heterogeneous metal
5 catalyst comprises a metal selected from the group consisting of Raney-nickel (Raney-Ni), ruthenium (Ru), palladium (Pd), platinum (Pt), and rhodium (Rh), and is used in an amount of 2-30 wt%, based on the total reactants.

9. The method as defined in claim 1, wherein the heterogeneous metal
10 catalyst comprises a metal supported to a support, and is used in an amount of 2-30 wt%, based on the total reactants, and

the metal being selected from the group consisting of Raney-nickel (Raney-Ni), ruthenium (Ru), palladium (Pd), platinum (Pt), and rhodium (Rh), and

the support being selected from the group consisting of alumina, silica,
15 zeolite, and molecular sieve.

10. The method as defined in claim 1, wherein the step (c) is performed at 50-200°C.

11. The method as defined in claim 1, wherein the acid catalyst is selected from the group consisting of sulfuric acid, phosphoric acid, nitric acid, p-toluene
20 sulfonic acid, and benzene sulfonic acid, and is used in the amount of 0.1-5 wt%, based on the total reactants.

12. The method as defined in claim 1, wherein the organic solvent in the step (c) is selected from the group consisting of benzene, toluene, and xylene.

13. The method as defined in claim 1, wherein the 2-(2-
5 aminophenylsulfuryl)benzoic acid is used in an amount of 1-50 wt%, based on the total reactants.